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› [iRhapsody](#) /

› iRhapsody 4-pin 40/30AMP 12V DC Waterproof Relay Instruction Manual

iRhapsody B08D8TSMFV

iRhapsody 4-pin 40/30AMP 12V DC Waterproof Relay Instruction Manual

MODEL: B08D8TSMFV

Brand: iRhapsody

1. PRODUCT OVERVIEW

The iRhapsody 4-pin 40/30AMP 12V DC Waterproof Relay is a Single Pole Single Throw (SPST) automotive relay designed for various electrical applications in vehicles. It features heavy-duty 12 AWG tinned copper wires for the load terminals, ensuring reliable performance. This relay is built with excellent water-repellent and dustproof capabilities, making it suitable for demanding environments.

Key Features:

- **High Current Capacity:** Rated for 40A/30A at 12V DC.
- **Durable Wiring:** Features thick 12 gauge wire for load terminals and 16 gauge for triggering wires.
- **Waterproof Design:** Offers excellent water-repellent and dustproof ability (not for submersion).
- **Flexible Activation:** Can be activated by either positive or negative triggers.
- **Easy Installation:** Designed for straightforward setup following the provided wiring diagrams.

2. PACKAGE CONTENTS

The package includes the following components:

- 1 x 12VDC 4 PIN waterproof relay kit



Image: The iRhapsody 4-pin 40/30AMP 12V DC Waterproof Relay with its pre-wired harness, showcasing the main components.

3. SPECIFICATIONS

Parameter	Value
Nominal Coil Voltage	12 V DC
Coil Power	1.8 W
Coil Resistance	80 Ω
Must Operate Voltage	6~8 V DC
Must Release Voltage	0.6~3.6 V DC

Parameter	Value
Maximum Applied Voltage	15.6 V DC
Contact Ratings	NO 40A 14V DC
Contact Resistance	100mMAX (at 6VDC 1A)
Max Switching Current	40A
Max Switching Power	560 W
Life Expectancy Electrical	100,000 Operations (at 30 Operations/minute)
Life Expectancy Mechanical	10,000,000 Operations
Temperature Range	-30 ~ +80 degrees Celsius
Vibration Resistance	10~55Hz, 1.5mm
Shock Resistance	Operations Extremes: 10g. Damage Limits: 100g
Humidity	40% ~ 85%
Insulation Resistance	100mΩ Min at 500VDC
Dielectric Strength Between Open Contacts	500VAC (for one minute/sec)
Dielectric Strength Between Contact and Coil	750AC (for one minute/sec)
Operate Time	7ms
Release Time	5ms
Connector Type	Wired
Contact Material	Copper
Contact Type	Normally Open
Mounting Type	Socket Mount

4. SETUP AND INSTALLATION

Proper installation is crucial for the safe and effective operation of your iRhapsody relay. Always ensure the power source is disconnected before beginning any wiring.

Wiring Considerations:

- The relay features thick 12 gauge wires for the load terminals (pins 30 and 87) and 16 gauge wires for the coil control (pins 85 and 86).
- Ensure all connections, especially on the load wires, are tight to prevent burning or poor performance.
- Be careful when inserting the relay into the socket to avoid bending the female connectors.
- Always install an appropriate fuse on the battery line (pin 30) to protect the circuit.

Wiring Diagrams:

The iRhapsody relay can be activated using either a ground trigger or a positive trigger. Refer to the diagrams below for common wiring configurations.

Normally OFF Relay with a **GROUND** Trigger

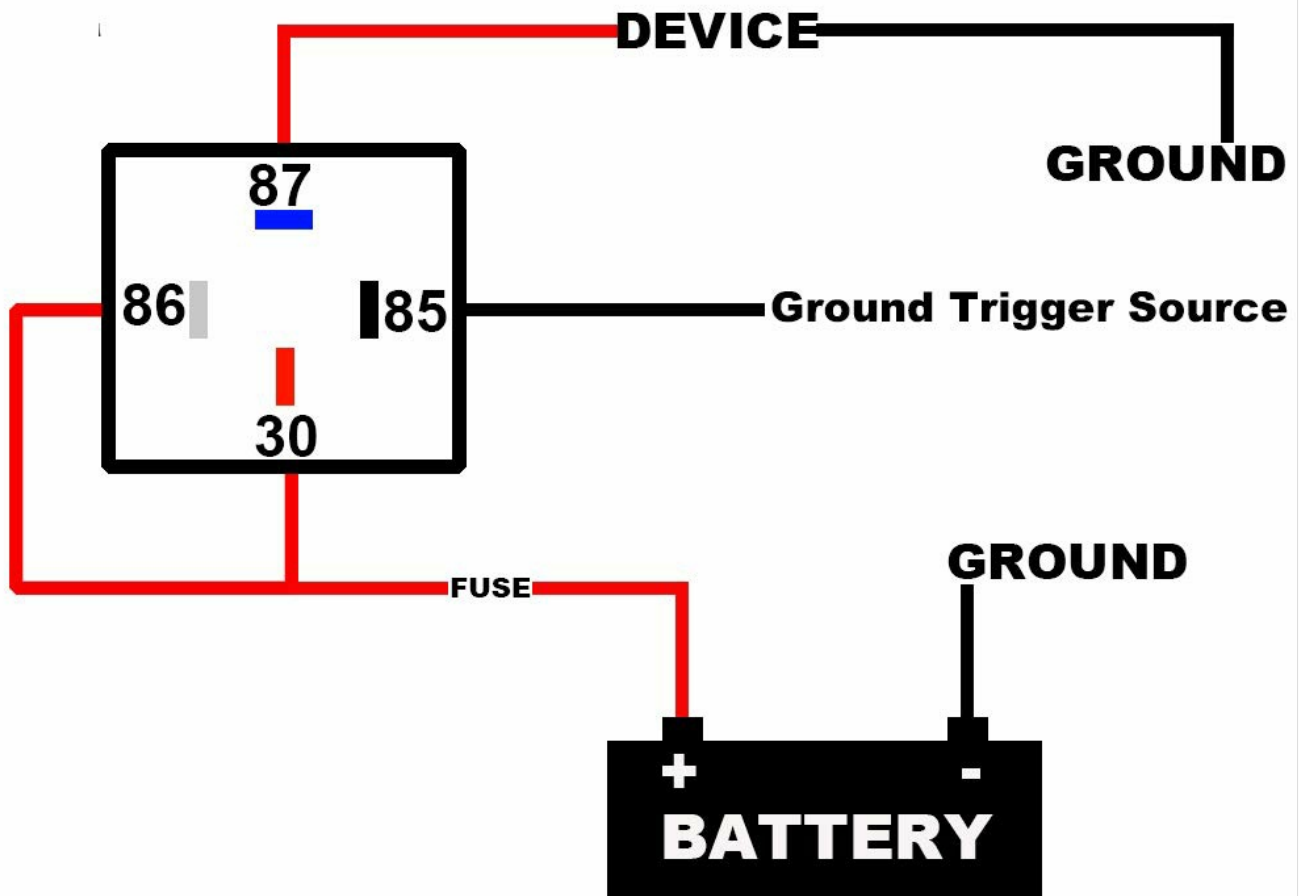


Image: Wiring diagram illustrating how to connect the relay for activation using a ground trigger. Pin 85 connects to the ground trigger source, and pin 86 connects to the battery's positive terminal (with a fuse).

Normally OFF Relay with a **POSITIVE** Trigger

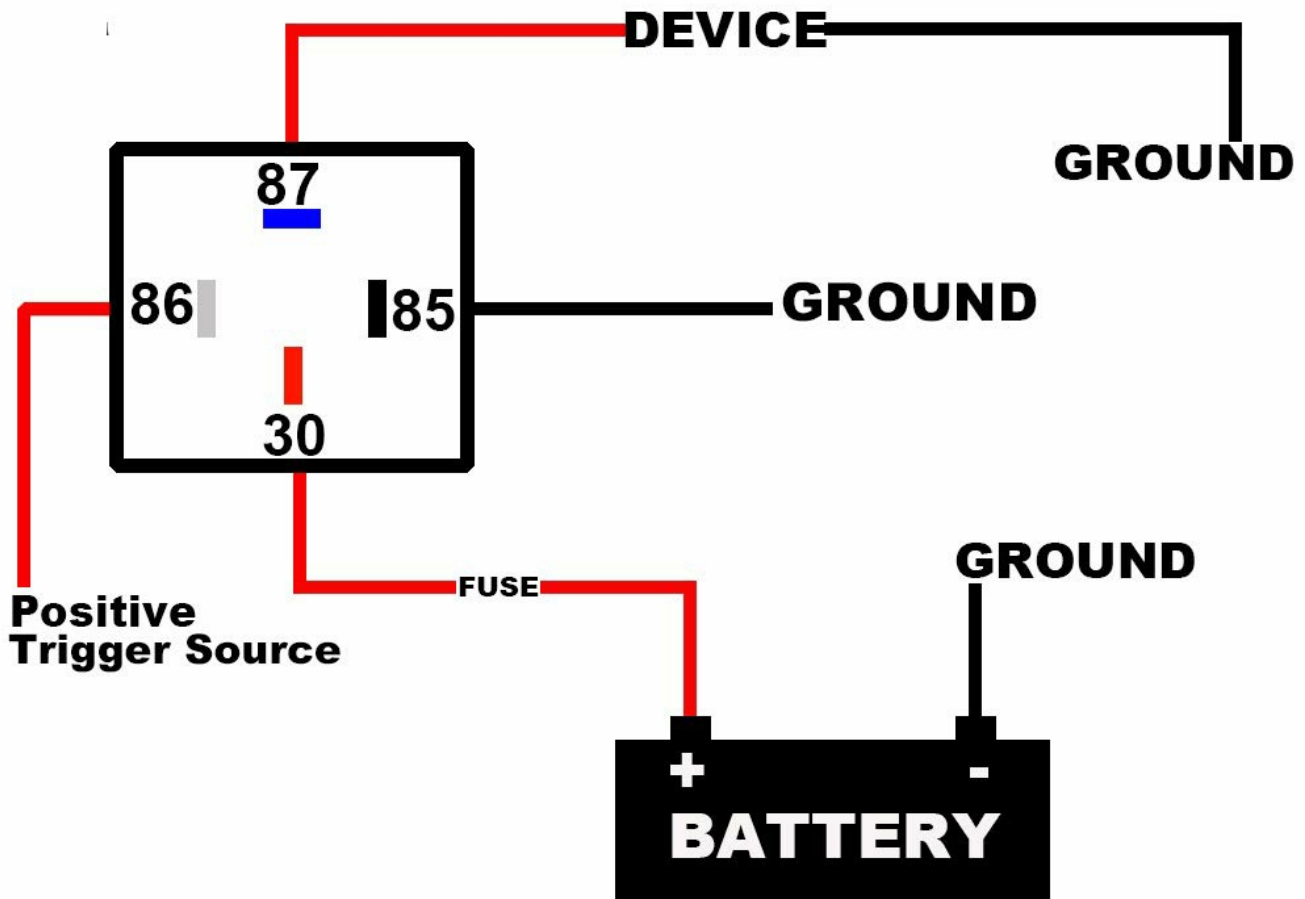


Image: Wiring diagram illustrating how to connect the relay for activation using a positive trigger. Pin 86 connects to the positive trigger source, and pin 85 connects to ground.

The relay works for both positive and negative activation. Ensure the operating environment meets the safety requirements of the relay.

5. OPERATING THE RELAY

The iRhapsody 4-pin relay operates as a Single Pole Single Throw (SPST) switch. When the coil is energized (by applying the correct trigger, either positive or negative, to pins 85 and 86), the internal contacts close, allowing current to flow between pins 30 and 87 (Normally Open). When the coil is de-energized, the contacts open, breaking the circuit.

To operate, simply apply the specified trigger voltage (12V DC) to the control pins (85 and 86) as per your chosen wiring configuration (ground or positive trigger). The relay will then switch the connected device on or off.

6. MAINTENANCE

The iRhapsody relay is designed for durability and features excellent water-repellent and dustproof capabilities. However, it is important to note that it is **not intended for use submerged in water**. Regular inspection of the wiring and connections for any signs of wear, corrosion, or looseness is recommended to ensure optimal performance and safety.

Keep the relay clean and free from excessive dirt or debris. No specific internal maintenance is required for this sealed unit.

7. TROUBLESHOOTING

Common Issues and Solutions:

- **Relay Not Actuating:**
 - Check all wiring connections for tightness and correct polarity according to the wiring diagrams.
 - Verify that the correct trigger voltage (12V DC) is being applied to the coil pins (85 and 86).
 - Inspect the fuse in the battery line; replace if blown.
- **Relay Burning/Overheating:**
 - Ensure the load current does not exceed the relay's maximum switching current (40A). It is recommended to stay 10 to 15% below the rated capacity.
 - Confirm that the operating environment's temperature is within the specified range (-30 ~ +80 degrees Celsius).
 - Check for loose connections, especially on the load wires, as this can cause resistance and heat buildup.
- **Difficulty Inserting Relay into Socket:**
 - Do not force the relay into the socket. This can bend or damage the female connectors.
 - Align the pins carefully before applying gentle, even pressure.

8. SAFETY INFORMATION

Always adhere to general electrical safety practices when working with automotive electrical systems. Disconnect the battery before making or breaking any connections. Ensure proper insulation for all wiring to prevent short circuits.

Do not exceed the specified voltage and current ratings of the relay. Operating the relay beyond its capabilities can lead to damage, overheating, or fire hazards.

9. WARRANTY AND SUPPORT

This iRhapsody product is manufactured by IRHAPSODY. For detailed warranty information or technical support, please refer to the official iRhapsody store on Amazon or contact their customer service.

An official User Manual (PDF) is available for download: [Download User Manual \(PDF\)](#)